

WHAT IS CLAIMED IS:

Sub
B37

1. A safety device for a motor vehicle comprising:

a gas generator;

an airbag connected to be filled by the gas generator in the event of an accident; and

at least one orifice, through which gas can flow and a flow resistance of which is variable; wherein

the orifice is duct shaped, at least in a partial region; and

the flow resistance of the duct-shaped partial region adjusts automatically as a function of flow velocity of gas flow flowing through the orifice.

2. The safety device according to Claim 1, wherein the flow resistance of the orifice increases with increasing flow velocity of the gas flow flowing through the orifice.

3. The safety device according to Claim 1, wherein the flow resistance of the orifice decreases with decreasing flow velocity of the gas flow emerging through the orifice.

4. The safety device according to Claim 1, wherein the orifice comprises an elastic tubular duct.

5. The safety device according to Claim 1, wherein said duct shaped partial region of the orifice comprises a movable closure element, which extends parallel to the alignment of the orifice and is arranged in front of the orifice, and cooperates with regions of the safety device that surround the orifice.

6. The safety device according to Claim 5, wherein the closure element is spring-loaded.

7. The safety device according to Claim 1, wherein the duct shaped partial region comprises at least two closure elements which are aligned essentially parallel, extend perpendicularly to the alignment of the orifice and are mounted in front of the orifice.

8. The safety device according to Claim 7, wherein the closure elements comprise an elastic material.

9. The safety device according to Claim 7, wherein the closure elements comprise an elastic material.

10. The safety device according to Claim 1, wherein at least a pressure parameter that occurs in the duct-shaped partial region owing to Bernoulli's pressure equation is used as an input variable for a control process for adjusting the flow resistance.

11. The safety device according to Claim 1, wherein side walls of the duct-shaped partial region are gas-permeable.

12. The safety device according to Claim 1, wherein the side walls of the duct-shaped partial region have at least one of the following characteristics:

they are perforated; and

their inner surfaces have a specific surface configuration.

13. The safety device according to Claim 1, wherein the orifice is formed in the airbag.

14. The safety device according to Claim 1, wherein the orifice is arranged in a region of a connecting element (8) between the gas generator and the airbag.

15. The safety device according to Claim 1, wherein the orifice is formed in the gas generator.

16. The safety device according to Claim 1, wherein, in addition to the self-adjusting orifice, the safety device further comprises at least a second orifice.

17. The safety device according to Claim 16, wherein, the second orifice has an essentially constant size.

18. The safety device according to Claim 1, further comprising means for ensuring minimum leakage, provided in the orifice.

19. The safety device according to Claim 1, wherein one of a characteristic, a characteristic curve, behavior and a flow path of the safety device is adjustable as a function of a direction of gas flow.

20. A method of regulating a pressure response in an airbag of a vehicle airbag safety restraint system, comprising:

providing an orifice for flow of gas into or out of said airbag; and

adjusting a fluid flow resistance of said orifice as an inverse function of a flow velocity of gas flowing through said orifice.

21. The method according to Claim 20, wherein:

said orifice is provided in the form of an elastic duct; and

said adjusting step comprises expanding and contracting a cross sectional area of said elastic duct in response to pressure in said gas flowing through said orifice.

Add B47